

CVPCP and HRP Priority Project Area Map

Explanation of Boundary Determination

I. Definition and Purpose

The CVPCP/HRP Priority Project Area Map depicts a general geographical area where future Program conservation actions will be directed. The map illustrates the relationship of the Central Valley Project (CVP) to species and habitats in and around CVP facilities and Service Areas and the most current CVP Consolidated Place of Use boundary.

The central purpose of the map is to provide conservation action proponents with guidance related to locations deemed important for recovery and protection of CVP impacted species. The map will be made available to funding applicants during annual Program solicitation.

While the map does correlate past and ongoing impacts of the CVP with species and habitats, it is not intended to be a comprehensive depiction of all areas historically impacted by the CVP, either directly or indirectly, nor is it meant to illustrate areas impacted by implementation of the Central Valley Project Improvement Act (CVPIA). The “Priority Project Area,” therefore, represents a project area where the relationship between past, ongoing, and future CVP impacts –in relation to species’ needs – is clear.

A single map was chosen for both the CVPCP and HRP, though some differences in program requirements exist. As specified in biological opinions, the CVPCP addresses past, ongoing, and future impacts of the project, while the HRP (established under section 3406 (b)(1) other of the CVPIA) is meant to address historical impacts of the CVP (prior to establishment of the Act, 1992). It was determined, however, that given the large degree of geographic overlap, creation of two separate maps would not be warranted and may confuse project proponents. Program managers can ensure, during the project selection process, that the requirements related to ongoing and historical impacts are met. Projects selected for HRP funding, for example, will be within geographic areas where historical (pre-1992) impacts are certain. Projects more related to on-going/future impacts in recently expanded CVP Place of Use areas, will be funded by the CVPCP.

II. General Criteria

Determining the Priority Project Area boundary was accomplished using three basic criteria: 1) existing and past CVP Consolidated Place of Use, 2) priority habitats impacted by the CVP (as identified in existing biological opinions and “critical needs” analysis related to CVP contracts and operations), and 3) U.S. Forest Service (USFS) Ecological subregion (Section and Subsection) boundaries that could be associated with CVP impacted habitats as a way of “enclosing” the project area.

During the mapping exercise, areas were divided into quadrants to simplify the process. The general mapping criteria are described below, followed by more detailed information regarding inclusion of habitats and subregions within each quadrant.

- a.) CVP Consolidated Place of Use. The place of use is the area authorized by the California State Water Resources Control Board to be entitled to water service under Bureau of Reclamation CVP water service contracts. Existing, and past, CVP place of use boundaries were encompassed to formulate the “core” project area, since place of use areas generally represent regions of direct and indirect CVP impacts, past and future.
- b.) Priority Habitats Impacted by the CVP: Habitats known to be impacted directly or indirectly by the CVP have been identified in biological opinions related to CVP contract renewals and operations. These habitats have also been specified during annual priority-setting meetings with Service and Reclamation managers, as needs and priorities are updated. These habitats are indicated below. An absence of Serpentine and Gabbro soil habitat mapping precluded depiction of this habitat type on the map, though key areas have been included in the project area boundary.
 - 1.) *Serpentine soil* and associated habitats supporting endemic species, such as the bay checkerspot butterfly and serpentine plants, in Santa Clara County.
 - 2.) *Grassland, alkali sink, and alkali scrub* habitat in the Central Valley.
 - 3.) *Vernal pool* habitat throughout the Central Valley
 - 4.) *Gabbro soil chaparral* habitat in El Dorado County
 - 5.) *Riparian, aquatic (including wetlands)* and associated habitat mosaics (including *oak woodlands*) in the Central Valley and associated foothills.
- c.) USFS Ecological Subregions of California: Ecological subregions are defined in The Ecological Subregions of California, Section and Subsection Descriptions (USFS, Pacific Southwest Region, 1998 online). Elaborate descriptions of these Sections and Subsections can be obtained by consulting the USFS website. For mapping purposes, a Section encompassing the above priority habitats was included, as well as a Subsection boundary that had biological connection (overlapping species/habitats) with priority habitats. For the most part, subsection boundaries were a function of lower elevation, foothill communities associated with the valley floor.

III. Mapping Quadrants

For practical purposes, the Priority Project Area Map was broken into four areas (quadrants). This was done to allow mappers to focus more narrowly on the ecological relationships between priority habitat types, CVP consolidated place of use boundaries, and USFS ecoregion contour lines. The following are general descriptions of the area encompassed by a quadrant and the USFS ecoregions associated with priority habitats and CVP place of use, that were selected for inclusion. Locating actual ecoregion contour lines (Section and Subsections) can be accomplished through accessing the USFS website.

Southwest Quadrant

This quadrant included the southwest portion of Alameda County, all of Santa Clara County, most of San Benito County, western portions of San Joaquin, Stanislaus, Merced, Fresno, Kings and Kern Counties. The quadrant also included the southeastern portion of San Luis Obispo County in order to encompass the Carrizo Plain National Monument. This area was included to address critical needs of CVP impacted species that utilize the monument and that are associated with valley floor habitats. For this quadrant, CVP priority habitats included:

Central Valley Grassland, Alkali sink and Alkali Shrub

Central Valley Vernal Pools

Riparian, Aquatic (wetlands) and Associated Upland, including Oak Woodlands

Serpentine Soils and Associated Species – for this quadrant, this is defined as habitat for the Bay Checkerspot Butterfly.

Eastern Contra Costa County

For this quadrant, the Great Valley, Sierra Nevada Foothills, Central California Coast Ranges, and Central California Coast ecological sections encompassed CVP Consolidated Place of Use boundaries and the above five priority habitat areas. These sections included numerous subsections that were utilized as mapping boundaries. A brief description of these Sections and Subsections is as follows:

a. Great Valley (Section 262A) – This section contains the alluvial plains of the San Joaquin Valley.

This section includes the three CVPCP/HRP habitat types listed above, and many of the CVP-impacted special status species. All USFS subsections of the Great Valley section in the SW quadrant are included in the project area. Predominant potential communities

relevant to the proposal action area include California annual grassland series, Purple needlegrass series, Valley oak series, vernal pools and wetland communities, blue oak series, allscale series and saltgrass series.

b. Sierra Nevada Foothills (Section M261F)

This section includes the Riparian, Aquatic (wetlands) and Associated Upland CVPCP/HRP habitat types.

The USFS subsection is the San Emigdio Mountains (subsection M261Fe). The predominant natural plant community is Blue oak series, with Ponderosa pine series and Jeffrey pine series at higher elevations. Also, there are some Needlegrass grasslands, Canyon live oak series on steep canyon slopes, Chamise series and Mixed chaparral shrublands on shallow and rocky soils, and Valley oak series in valleys.

c. Central California Coast Ranges (Section M262A)

This section includes Central Valley Grassland, Alkali sink and Alkali Shrub and the Riparian, Aquatic (wetlands) and Associated Upland CVPCP/HRP habitat types.

The USFS subsections are:

Carrizo Plain (subsection M262Ai) – The predominant natural plant communities are California annual grassland series, Needlegrass grasslands, Salt grass series, and Emergent aquatic communities.

Caliente Range – Cuyama Valley (M262Aj) – The predominant natural plant communities are Blue oak series, Needlegrass grasslands, Chamise series on shallow soils, and California annual grassland series around Cuyama Valley. Around Cuyama Valley, Allscale series is present on salty soils and Iodine bush series on very salty soils. California juniper series is present on the south side of Cuyama Valley.

Temblor Range (M262Ak) - Relevant plant communities are Blue oak series, California juniper series, Needlegrass grasslands, Chamise series, and California annual grassland series.


Kettleman Hills and Valleys (M262Ag) - The predominant natural plant community is the California annual grassland series.

Eastern Hills (M262Ad) - The predominant natural plant communities are Needlegrass grasslands. There is some Blue oak series on north-facing slopes in wetter areas and some Chamise series on shallow soils. Valley oak series is common in valleys along the San Andreas fault zone.

Diablo Range (M262Ac) - The predominant natural plant communities are Blue oak series and, on shallow soils, Chamise series. There is Leather oak series on serpentine soils, and some Mixed chaparral shrublands. Sargent cypress series is present, but sparse,

on serpentine soils. Also, there is some Black oak series and Mixed conifer series on north-facing slopes at higher elevations, and Jeffrey pine series on serpentine soils on San Benito Mountain.

Western Diablo Range (M262Ab) - The predominant natural plant communities are Blue oak series on south-facing and Coast live oak series on north-facing slopes. There is some Chamise series on shallow soils, and some Live oak chaparral shrublands on shallow soils at higher elevations and on north-facing slopes. Valley oak series and Needlegrass grasslands are common in valleys. Black oak series and Mixed conifer series are inextensive, but present on some north-facing slopes at higher elevations.

Fremont-Livermore Hills and Valleys (M262Aa) - The predominant natural plant communities are Needlegrass grasslands in the hills around Livermore Valley and, in the hills northeast of the Santa Clara Valley. Blue oak series and Needlegrass grasslands occur on south-facing slopes and Coast live oak series on north-facing slopes. Valley oak series and California sycamore series are common plant communities on recent alluvial ns


d. Central California Coast (Section 261A) – Predominant potential communities are the Blue oak series, Purple needlegrass series, Coast live oak series, Chamise series, Valley oak series, and California sagebrush series.

This section includes the Central Valley Grassland, Alkali sink and Alkali Shrub and the Riparian, Aquatic (wetlands) and Associated Upland, and the Serpentine Soils and Associated Species CVPCP/HRP habitat types. The USFS subsections are:

Santa Clara Valley (subsection 261Ae) - The predominant natural plant communities are Valley oak series and California oatgrass series or Needlegrass grasslands. Coast live oak series, Needlegrass grasslands, and Blue oak series occur on hills and terraces.

Leeward Hills (subsection 261Ag) - The predominant natural plant communities are Coast live oak series and California bay series on north-facing slopes, Blue oak series on south-facing slopes, and Chamise series on shallow soils.

Watsonville Plain-Salinas Valley (subsection 261Ah) - The predominant natural plant communities are Valley oak series and Needlegrass grasslands in the Salinas Valley and Coast live oak series and California oatgrass series on the Watsonville Plain. There are Cottonwood woodlands in riparian areas along the Salinas River. The dunes support a succession of plant communities, from bare dune through herbaceous communities and Coyote brush series to California sagebrush - black sage series on stabilized dunes on the southeast side of Monterey Bay. There is some Pickleweed series in estuaries.

East Bay Terraces and Alluvium (subsection 261Ad) - The predominant natural plant communities are Coast live oak series on hills and California oatgrass series or Needlegrass grasslands on the alluvial n.

East Bay Hills-Mt. Diablo (subsection 261Ac) - The predominant natural plant communities are Coast live oak series in the East Bay Hills, both Coast live oak series and Blue oak series on Mt. Diablo, and Valley oak on alluvial plains. Chamise series is extensive on shallow soils on Mt. Diablo, and the usual natural plant community on Vertisols is Needlegrass grasslands. California sagebrush series is present on shallow soils on south-facing slopes in the East Bay Hills.

Southeast Quadrant

This quadrant included the eastern portions San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Kern Counties. It also included the western portions of Calaveras, Tuolumne, Mariposa, and Tulare Counties. The quadrant terminates south at the northern boundaries of Ventura and Santa Barbara Counties. For this quadrant, CVP priority habitats included:

Central Valley Grassland, Alkali sink and Alkali Shrub

Central Valley Vernal Pools

Riparian, Aquatic (wetlands) and Associated Upland, including Oak Woodlands.

For this quadrant, the Great Valley and the Sierra Nevada Foothills ecological sections encompassed CVP Consolidated Place of Use boundaries and the above three priority habitat areas. These sections included numerous subsections that were utilized as mapping boundaries. A brief description of these Sections and Subsections is as follows:

a. Great Valley (Section 262A) – This section contains the alluvial plains of the San Joaquin Valley. Predominant potential natural communities include Purple needlegrass series, Valley oak series, vernal pools and wetland communities, blue oak series, allscale series and saltgrass series.

This section includes the CVP Place of Use, the three CVPCP/HRP habitat types listed above, and most of the CVP-impacted special status species. All USFS subsections of the Great Valley section in the SE quadrant are included in the project area.

b. Sierra Nevada Foothills (Section M261F) - Predominant potential natural communities include the Blue oak series, Needlegrass grasslands, Chamise series, Mixed chaparral series, Foothill pine series and Valley oak series.

This section includes the Riparian, Aquatic (wetlands) and Associated Upland CVPCP/HRP habitat types.

USFS subsections are:

Lower Granitic Foothills (subsection M261 Fc) - The predominant natural plant community is Blue oak series. Also, there are some Needlegrass grasslands, Chamise series on shallow and rocky soils, and Valley oak series in valleys.

Southern Granitic Foothills (subsection M261Fd) - The predominant natural plant community is Blue oak series. Also, there are some Needlegrass grasslands, Chamise series on shallow and rocky soils, and Valley oak series in valleys.

San Emigdio Mountains (subsection M261Fe) - The predominant natural plant community is Blue oak series, with Ponderosa pine series and Jeffrey pine series at higher elevations. Also, there are some Needlegrass grasslands, Canyon live oak series on steep canyon slopes, Chamise series and Mixed chaparral shrublands on shallow and rocky soils, and Valley oak series in valleys.

The reason for including these subsections is that they have scattered riparian areas which are linked to the valley floor. These riparian areas provide corridors and linkages for high priority species addressed by the programs.

One area of Southern Granitic Foothill habitat in the southeastern part of the quadrant was eliminated from the project area. This is a valley in the interior of the Sierra Nevada Mountains and surrounded by Sierra Nevada montane habitat. It shares the same habitat type as the foothills, but is too far removed from the valley floor.

Northeast Quadrant:

This mapping area included southwest portions of Shasta county to the north, and eastern portions of Tehama, Butte, Yuba, Nevada, Placer, El Dorado, and Amador counties extending to the Central Valley floor, south to about the city of Stockton. For this quadrant, CVP priority habitats included:

Central Valley Vernal Pools

Riparian, Aquatic (wetlands) and Associated Upland, including Oak Woodlands

Gabbro soils chaparral habitat in El Dorado County

For this quadrant, the Great Valley and the Sierra Nevada Foothills Sections encompassed CVP Consolidated Place of Use boundaries and the above three priority habitat areas. The subsections, Tuscan Flows and Lower Foothills Metamorphic Belt were used to determine outer boundaries. A brief description of these Sections and Subsections is as follows:

Sections:

a. Great Valley (Section 262A) - This section includes the Central Valley Vernal Pools, Riparian, Aquatic (wetlands) and Associated Upland. Predominant potential

communities relevant to the proposal action area include California annual grassland series, Purple needlegrass series, Valley oak series, vernal pools and wetland communities, blue oak series, allscale series and saltgrass series.

b. Sierra Nevada Foothills (Section M261F) – This section includes the Central Valley Vernal Pools, Riparian, Aquatic (wetlands) and Associated Upland, and the Gabbro soils chaparral habitat in El Dorado County CVPCP/HRP habitat types. Predominant potential natural communities include the Blue oak series, Needlegrass grasslands, Chamise series, Mixed chaparral series, Foothill pine series and Valley oak series.

Subsections:

a. Tuscan Flows (Section 261 Fa) - The predominant natural plant community is Blue oak series. Needlegrass grasslands predominate on the Vertisols and shallow soils. Northern basalt flow and Northern volcanic mudflow vernal pool habitats occur in this subsection.

b. Lower Foothills Metamorphic Belt (Subsection M261Fb) - The predominant natural plant community is Blue oak series. Also, there are some Needlegrass grasslands, Chamise series on shallow and rocky soils, and Valley oak series in valleys.

Northwest Quadrant

This quadrant included the northwest portion of Shasta County and the eastern portions of Tehama, Glenn, Colusa and Yolo counties south to the northern boundary of Solano. *Solano County was not included in the project area since it is covered under a separate conservation program.* Additional southern counties included the northern portion of San Joaquin County, Contra Costa County, and northwest portions of Alameda County. For this quadrant, CVP priority habitats included:

Central Valley Vernal Pools

Riparian, Aquatic (wetlands) and Associated Upland, including Oak Woodlands

For this quadrant, the Great Valley, Central California Coast, Northern California Interior Coast Ranges, and Klamath Mountains ecological sections encompassed CVP Consolidated Place of Use boundaries and the above two priority habitat areas. These sections included numerous subsections that were utilized as mapping boundaries. A brief description of these Sections and Subsections is as follows:

a. Great Valley (Section 262A)

This section includes the two CVPCP/HRP habitat types listed above. All USFS subsections of the Great Valley section in the NW quadrant are included in the project

area. Predominant potential communities relevant to the priority project area include California annual grassland series, Purple needlegrass series, Valley oak series, vernal pools and wetland communities, Blue oak series, Allscale series and Saltgrass series.

b. Central California Coast (Section 261A) – Predominant potential communities are the Blue oak series, Purple needlegrass series, Coast live oak series, Chamise series, Valley oak series, and California sagebrush series.

This section includes the Riparian, Aquatic (wetlands) and Associated Upland CVPCP/HRP habitat types. The USFS subsections are:

East Bay Hills - Mount Diablo (Subsection 261Ac). The predominant natural communities are Coast live oak series in the East Bay Hills, both Coast live oak series and Blue oak series on Mt. Diablo, and Valley oak on alluvial plains. Chamise series is extensive on shallow soils on Mt. Diablo, and the usual natural plant community on Vertisols is Needlegrass grasslands. California sagebrush series is present on shallow soils on south-facing slopes in the East Bay Hills.

Suisun Hills and Valleys (subsection 261Aa) - The predominant natural plant communities are Needlegrass grasslands and Blue oak series. On the hills north of the Carquinez Strait it is mostly too windy for trees to survive, particularly on west-facing slopes and summits. Coast live oak series is the predominant natural plant community in most of the Briones Hills. Valley oak series is common on alluvial plains.

c. Northern California Interior Coast Ranges (Section M261C) - Predominant potential natural communities include the Blue Oak series, Chamise series, Purple needlegrass series and Foothill pine series.

This section includes the Riparian, Aquatic (wetlands) and Associated Upland and Central Valley Vernal Pools CVPCP/HRP habitat types. The USFS subsections are:

Tehama Terraces (Subsection M261Cb) - The predominant natural plant community is Blue oak series. Needlegrass grasslands predominate on some fine-textured Alfisols, and Northern claypan vernal pools are common.

Dunnigan Hills (Subsection M261Cc) - The predominant natural plant communities are Needlegrass grasslands. Blue oak series is present, but not common, on soils other than Vertisols.

d. Klamath Mountains - Predominant potential natural communities are conifers, oaks, and chaparral.

This section includes the Riparian, Aquatic (wetlands) and Associated Upland, including Oak Woodlands CVPCP/HRP habitat types. Almost all of the action area in this subregion is in the Eastern Klamath Mountains Subsection M261Ai. The predominant natural plant communities are Mixed conifer series, Douglas-fir - ponderosa pine series, and Ponderosa pine series. Blue oak series and Mixed chaparral communities occur on

south-facing slopes at lower elevations. Canyon live oak series is common on very steep rocky slopes with stony soils. White fir series occurs at higher elevations. The elevation range is from about 700 adjacent to the Great Valley up to 6252 feet.

Small amounts of four other subsections also occur. All are dominated by conifers and mostly at high elevations not appropriate for any CVPCP/HRP habitat types.